

WHAT IS CLAIMED IS:

1. An over-coating agent for forming fine patterns which is applied to cover a substrate having photoresist patterns thereon and allowed to shrink under heat so that the spacing between adjacent photoresist patterns is lessened, with the applied film of the over-coating agent being removed substantially completely to form fine patterns, further characterized by containing a copolymer or a mixture of polyvinyl alcohol with a water-soluble polymer other than polyvinyl alcohol.

2. The over-coating agent for forming fine patterns according to claim 1, wherein the water-soluble polymer is at least one member of the group consisting of alkylene glycolic polymers, cellulosic derivatives, vinyl polymers, acrylic polymers, urea polymers, epoxy polymers, melamine polymers and amide polymers.

3. The over-coating agent for forming fine patterns according to claim 2, wherein the water-soluble polymer is at least one member of the group consisting of alkylene glycolic polymers, cellulosic derivatives, vinyl polymers and acrylic polymers.

4. The over-coating agent for forming fine patterns according to claim 1, wherein polyvinyl alcohol is copolymerized or mixed in an amount of 0.1 - 5 times by weight as much as the water-soluble polymer other than polyvinyl alcohol.

5. The over-coating agent for forming fine patterns according to claim 1, which is an aqueous solution having a

concentration of 3 - 50 mass%.

6. A method of forming fine patterns comprising the steps of covering a substrate having thereon photoresist patterns with the over-coating agent for forming fine patterns of

5 claim 1, then applying heat treatment to shrink the applied over-coating agent under the action of heat so that the spacing between adjacent photoresist patterns is lessened, and subsequently removing the applied film of the over-coating agent substantially completely.

10 7. The method of forming fine patterns according to claim 6, wherein the heat treatment is performed by heating the substrate at a temperature that does not cause thermal fluidizing of the photoresist patterns on the substrate.